



**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

**FILED**

05/24/24

04:59 PM

R2005003

Order Instituting Rulemaking to Continue Electric  
Integrated Resource Planning and Related  
Procurement Processes

Rulemaking 20-05-003  
(Filed October 5, 2023)

**OPENING COMMENTS OF THE NATURAL RESOURCES DEFENSE COUNCIL ON  
ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENTS ON NEED AND  
PROCESS FOR CENTRALIZED PROCUREMENT OF SPECIFIED LONG LEAD-  
TIME RESOURCES**

May 24, 2024

Mohit Chhabra  
Lauren Kubiak  
Natural Resources Defense Council  
111 Sutter St., 21st floor  
San Francisco, CA 94104  
(415) 875-6100  
[lkubiak@nrdc.org](mailto:lkubiak@nrdc.org)

Kent Strauss  
Blue Biome Advising, LLC  
939 E Carrillo Rd  
Santa Barbara, CA 93103  
(415) 302-1272  
[kent.strauss@gmail.com](mailto:kent.strauss@gmail.com)

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Continue Electric  
Integrated Resource Planning and Related  
Procurement Processes

Rulemaking 20-05-003  
(Filed October 5, 2023)

**OPENING COMMENTS OF THE NATURAL RESOURCES DEFENSE COUNCIL ON  
ADMINISTRATIVE LAW JUDGE’S RULING SEEKING COMMENTS ON NEED AND  
PROCESS FOR CENTRALIZED PROCUREMENT OF SPECIFIED LONG LEAD-  
TIME RESOURCES**

**I. Introduction and Summary**

The Natural Resources Defense Council (NRDC) submits these comments on Administrative Law Judge’s Ruling Seeking Comments on Need and Process for Centralized Procurement of Specified Long Lead-Time Resources (henceforth known as “Ruling”) filed on April 26, 2024. NRDC is a non-profit organization with more than 90,000 California members who have an interest in receiving reliable and affordable energy services while reducing their environmental impact and combatting climate change.

NRDC appreciates the robust effort the Commission has undertaken to establish a centralized procurement process and conduct cost-benefit analyses. The resulting Ruling and analyses are a good starting point in assessing what an initial need determination should be for offshore wind (OSW), geothermal, long-duration energy storage, and out-of-state wind. NRDC views a need determination as a minimum amount of resource to be centrally procured that then sets up the industry to develop competitively beyond that initial tranche. For OSW, the need determination should be 5 GW by 2035, spread across both the northern California and central coast lease areas. NRDC believes this level will provide enough certainty to spur investment in necessary infrastructure, while leaving some room for competitive additional procurement toward full buildout of 10 GW in the existing lease areas, and toward the state’s 25 GW by 2045 planning goals.

NRDC arrived at this recommendation through careful analysis of the Commission's OSW cost-benefit analysis. There are several elements that do not appear to have been incorporated into that analysis that are likely to have a large impact on what is identified as the ideal OSW need determination that maximizes benefits while minimizing risk to ratepayers. These include the time period analyzed and ensuring that the full life of project is included in the analysis, the limitations of a levelized cost of electricity metric, the sensitivity of discount rates, and the apparent omission of IRA incentives included in the model. In addition, OSW benefits significantly from economies of scale, and the model appears to be underestimating those benefits. NRDC recommends the Commission conduct additional modeling to ensure that benefits are fully accounted for.

In absence of additional modeling, NRDC recommends the Commission establish a need determination for OSW that is significantly higher than the suggested 1-3 GW to account for the likely underestimate of benefits. The need determination is a crucial step in spurring OSW development in California, and a determination that is too low is unlikely to generate investment in port, transmission, and supply chain infrastructure necessary to bring OSW online. The downsides to establishing a need determination that is too low are enormous. In addition, the need determination should establish procurement in both the north coast and central coast lease areas to ensure that there is infrastructure investment in both the northern and central areas.

An ideal need determination would be sufficiently high to provide enough certainty to generate infrastructure investment, which would then produce cost and benefit data that the Commission and other planning authorities can incorporate into future centralized procurement, IRP portfolio development, and other planning processes. Yet it would be low enough that there would be additional available area in leased areas that could be developed competitively at lower prices beyond the initial tranche of centralized procurement. Setting an appropriate need determination is a crucial factor toward setting California on a path to achieve its 25 GW planning goal by 2045 in a cost-effective manner.

We thank the Commission for its undertaking of such an important and time and resource-intensive process.

## **II. Discussion: Responses to Select Questions for Parties**

**1. Please comment on whether Figure 1 above outlines the appropriate criteria for considering whether a resource should be procured via the DWR centralized procurement mechanism. Are these the right criteria or are there others that should be added or substituted?**

Figure 1 outlines the appropriate criteria. The large project sizes and mismatch between project size and need between sellers and buyers, economies of scale, large resource potential, and large potential cost reductions through learning are all factors that contribute to the need for centralized procurement.

**2. Should other resource types (beyond OSW, OOS wind, geothermal, and LDES) also be considered for centralized procurement through DWR at this time? Provide rationale if you suggest other resources should be included.**

One possible way to determine which other resource types are candidate for central procurement is to compare resource procurement estimates in the Preferred System Plan with planned LSE procurements. NRDC reserves the right to further respond to this question via reply comments.

**3. In addition to the list of criteria for eligible resources in the AB 1373 statute, are there additional criteria that should be taken into account by the Commission when determining which resources should be procured through the DWR centralized procurement mechanism? Specify.**

The AB 1373 statute specifies that in order to be eligible for central procurement, resources must directly support attainment of goals specified in Section 454.53 without increasing the state's dependence on any fossil-based fuels, are not under contract at sufficient levels, have a construction and development lead time of at least five years, do not generate electricity using fossil fuels or fuels derived from fossil fuels, and do not use combustion to generate electricity. These are strong criteria and NRDC has no further comment at this time but reserves the right to expand on this and related points in reply comments.

**5. How could developers leverage the many incentive opportunities that are available from the Federal government through the Inflation Reduction Act and the Bipartisan Infrastructure Law to assist with the financing of LLT resource development? How could developers and contractors access the Department of Energy or other agency grants for resource and infrastructure development that are available for projects that improve reliability and grid flexibility? How might centralized procurement help leverage federal funds for each resource type?**

The Inflation Reduction Act (IRA) makes available through investment and production tax credits an unprecedented amount of capital for renewable energy development, including multiple incentives that OSW developers can access.<sup>1</sup> Projects that begin construction before January 1, 2026 are eligible for an investment tax credit (ITC) of 6%, which increases to 30% for facilities that pay prevailing wages and meet registered apprenticeship requirements. There's an additional 10% ITC bonus credit available for projects that meet domestic content requirements, and an additional 10% bonus beyond that for projects located in communities that are home to significant numbers of fossil fuel or unemployed workers.<sup>2</sup> These bonus adders support strong labor requirements, the building of a local clean energy manufacturing economy, and ensuring that communities burdened by fossil fuels or high unemployment benefit from the clean energy transition.

**6. Comment on the cost-benefit analysis conducted, including the analysis presented in the slide deck posted on the Commission's web site. Does the analysis serve as a reasonable basis for a need determination? Specify how and why.**

The Commission's supplemental cost-benefit study to explore cost-benefit scenarios for OSW at various procurement levels is a step in the right direction. The study serves as a reasonable basis for the need determination by showing that central procurement could provide benefits detailed on page 4 because:

- There are significant economies of scale in developing transmission and port infrastructure for OSW. This means that procurement needs to occur at a scale that may be too large for a single LSE for OSW investment to be cost-effective.
- High uncertainty in the costs and net benefits of OSW make it challenging for LSEs to procure OSW individually.
- The scenarios presented often involve high costs of OSW deployment, suggesting potential benefits from market transformation and emerging technology development.

Additionally, several elements of the cost-benefit study should be analyzed further:

---

<sup>1</sup> <https://crsreports.congress.gov/product/pdf/IN/IN11980>

<sup>2</sup> <https://www.irs.gov/newsroom/irs-issues-guidance-for-energy-communities-and-the-bonus-credit-program-under-the-inflation-reduction-act>

1. *Timeline period:* Documentation indicates that the costs and benefits for OSW are analyzed from 2024 to 2045, with electricity generation and delivery commencing in 2035 in most scenarios. It is unclear why this period was chosen, given that OSW projects have a projected lifespan of 25-30 years. Significant energy generation (and benefits) will accrue outside the period used for the study, affecting both the net benefits calculated and the levelized costs calculated. If benefits beyond 2045 aren't accounted for then this would underestimate the net-benefits of OSW.
2. *Levelized cost metric:* While the levelized cost of electricity is useful in comparing the cost of electricity generation over the lifetime of projects, it has clear limitations. First, it does not account for the dynamics of matching generation to demand over the course of a day or year. That is, it treats all generation as equal even if the value of generation varies with time; generation that can meet high demand moments (such as winter evenings) has higher value than generation in the middle of the day in California. Second, in the case of OSW, levelized cost metrics are highly sensitive to both discount rate and interest rates. We suggest analyzing the levelized cost under different discount and interest rate scenarios to understand how sensitive the resulting values are to these assumptions.
3. *Sensitivity to discount factors:* OSW levelized cost analysis is particularly sensitive to discount rate assumptions because of the relatively high upfront costs of development and relatively low ongoing maintenance and generation costs. We recommend further analysis to understand the effects of the discount factor assumptions and whether alternative discount factors substantially affect the results.
4. *Economies of scale within a call area:* There are significant economies of scale in developing an OSW call area, like building transmission lines to connect to OSW turbines. To this end, the average costs of developing OSW should display a U-shaped curve. I.e., average costs would decrease as more capacity is added until adding more OSW in a call area gets challenging at which point average costs would increase. Assuming a linear relationship between OSW capacity and costs within a call area may underestimate the costs of building small amounts of OSW capacity and it may overestimate the costs of building well-sized projects within a call area.
5. *Including IRA incentives in modeling:* As noted in question 5, there are numerous incentives available through the IRA that OSW developers may be able to access. The

Commission's documentation is not clear on how and whether those incentives are included in its cost-benefit analysis. The Commission should update its guidance to clarify how IRA incentives are being incorporated into the analysis. If IRA incentives are not modeled, the Commission should include additional scenarios in which an IRA sensitivity would better reflect the reality of project costs should developers access these incentives.

**7. Are the quantities of resources contained in the PSP portfolio adopted in D.24-02-047 a reasonable basis for considering utilization of the centralized procurement mechanism? Provide your rationale.**

Please see response to question 8.

**8. What need determination for centralized procurement should the Commission make before the September 1, 2024 AB 1373 deadline and why? Specify which resource types, in what amount, and by when.**

The Commission should order 5 GW of OSW by 2035. This 5 GW target should include procurement from both Morro Bay and Humboldt. We arrive at the 5 GW target by rounding up the 4.9 GW procurement amount modeled as a part of the RESOLVE cost-benefit analysis. The rationale for this choice is summarized in the following paragraphs.

The net benefits of OSW are likely understated as explained in our response to question 6, or conversely the net costs are overstated, due to understandable analysis limitations as explained in question 6. Upon accounting for an improved timeline period, adjusting the levelized cost metric to better reflect OSW value and uncertainties of parameters within, and especially the large economies of scale inherent to OSW development, we expect the high market transformation benefit and limited ratepayer risk to shift toward a higher amount of procurement. This would mean that the spread of net benefits around the 4.9 GW and 7.6 GW OSW sensitivities would skew more positive than what is presented in Figure 4 of the Ruling.

Developing OSW entails high fixed development costs; i.e., building infrastructure for ports and transmission is costly and enough OSW needs to be purchased to make these infrastructure objectives cost-effective. However, there is a limit to forward procurement guarantees. Promising too much now will discourage efficient buildout and cost ratepayers. A key objective of central procurement for OSW is thus to procure enough to justify high infrastructure investments and to lay the groundwork for additional cost-effective procurement for LSEs. A 5

GW initial central procurement target spread between Humboldt and Morro Bay accomplishes this.

Combined Humboldt and Morro have around 10 GW of OSW capacity based on today's best estimates. A 5 GW target would develop enough OSW in both call areas, still leave enough potential for incremental cost-effective procurement as need arises, and provide important environmental and development lessons for responsible deep water OSW sourcing in CA and elsewhere. Future costs of OSW and alternative resources, regulatory requirements, and environmental constraints are uncertain and somewhat subject to learning by doing. 5 GW procurement spread across both call areas is a sensible first step to balance initial environmentally responsible development as well.

To this end, the transmission infrastructure should be built to accommodate full call area OSW potential. If transmission lines are going to be built to both call areas anyway, it is sensible to build to full call area capacity. This enables incremental procurement as need arises cost-effectively; going back and building new transmission is costly, time, and resource intensive.

**9. What other elements of future Commission need determinations (such as the scope of analysis, cost assumptions, ways to manage uncertainty) would provide the best foundation for a centralized procurement solicitation?**

Please see response to question 6.

**10. Is the rationale described above for DWR centralized procurement to be used for new uncontracted resource types, such as OSW, as a public good for GHG reduction purposes reasonable? Why or why not?**

Yes, it is reasonable to use centralized procurement for new uncontracted resource types as a public good. Sharing the costs of OSW across the broadest possible group of ratepayers allocates risk in a fair way. If not done so, it would be difficult for the resource to get built.

**11. If DWR centrally procures undeveloped resources as a public good, how should that procurement relate to the individual LSE procurement (existing resources under contract and/or future procurement)?**

The ruling makes a strong case for the role of central procurement in contributing to development of resources such as OSW that are a public good. If DWR centrally procures undeveloped resources, it is important to establish rules that minimize the risk of crowding out LSE procurement and likewise minimizes the risk of under-procurement. One way to do this



could be to apply the amount of centrally procured resource to the overall procurement target, and then to reduce the LSEs' procurement obligation proportionately.

**12. How should any DWR centralized procurement relate to the eventual RCPPP design, given that the Commission has not yet adopted an RCPPP design and yet must make an initial need determination by September 1, 2024?**

NRDC recommends that RCPPP establish clean energy (MWh) and marginal capacity (MW) requirements. To this end, RCPPP requirements should be adjusted by the clean energy and marginal capacity value of OSW procured via the CPE.

**13. This ruling proposes that LSEs not be allowed to opt out of DWR centralized procurement requested by the Commission. If you disagree with that proposal, explain why with citations and discussion of relevant provisions of AB 1373.**

NRDC agrees with the Ruling proposal to not allow LSEs to opt out of DWR centralized procurement. If too many LSEs opt out then the benefits of centralized procurement would be reduced. In addition, multiple call areas should be included in DWR procurement so that the capacity and MWh bought online can benefit the northern and southern zones in CA.

**14. Should a need determination for DWR centralized procurement be made by the Commission during every IRP cycle during the consideration of the PSP or at some other time? Explain the rationale for your preferred approach.**

It makes sense for the Commission to make a need determination for DWR centralized procurement during consideration of the PSP during every IRP cycle. The Commission should make a need determination every two years so it is regularly assessing the need for centrally procured resources. Because during consideration of the PSP is when the Commission is projecting resource needs, it makes sense for centralized procurement to be part of this process. We also support the Commission's ability to make a need determination outside of this cycle timeline if necessary. If a more logical process or time is identified, the Commission could amend this process in the future.

**20. How would DWR's solicitation and contracting process need to change for circumstances where POU's and/or individual LSEs seek additional volumes of procurement beyond the amount of need determination authorized by the Commission? How would those additional costs and benefits be allocated fairly to benefitting LSEs and/or POU's?**

As discussed in question 8, a need determination for OSW should be thought of as a minimum amount necessary to centrally procure to create sufficient certainty to trigger

infrastructure investment but should not be a cap of any sort. DWR's solicitation and contracting process should be designed in a way that allows LSEs to procure resources beyond the levels in the need determination.

**23. Some LLT eligible resources may require substantial infrastructure development, the costs of which are incremental to costs related to the deployment of the resource itself (for example, OSW requires port and transmission development; geothermal requires transmission development and construction in challenging environments). How do these contingent, necessary costs influence the overall financial impact of resource development for different eligible resources?**

The contingent, necessary costs for resource deployment, such as port and transmission development, will likely increase the overall expenses in developing additional generation through OSW. However, there are ways to mitigate the impacts these additional costs have on ratepayers. We recommend making efforts to pay for infrastructure to the extent possible with federal funding and taxpayer money, especially for elements like ports buildouts that are not part of the electric grid. We also suggest analyzing infrastructure costs for different levels of OSW resource build out to understand where there might exist economies of scale.

## **I. Conclusion**

NRDC appreciates the Commission's work in establishing a process for central procurement and its consideration of our views.

Respectfully submitted,

**Dated:** May 24, 2024

/s/ Mohit Chhabra

/s/ Lauren Kubiak

Natural Resources Defense Council

111 Sutter St., 21st floor

San Francisco, CA 94104

Telephone: (415) 875-6100

Email: [lkubiak@nrdc.org](mailto:lkubiak@nrdc.org)

/s/ Kent Strauss

Blue Biome Advising, LLC

939 E Carrillo Rd

Santa Barbara, CA 93103

Telephone: (415) 302-1272

Email: [kent.strauss@gmail.com](mailto:kent.strauss@gmail.com)